by LOUIS J. PARADISO

Consumer and Business Income and Spending Patterns in the Postwar Period

CONSIDERABLE interest centers on means for lifting the economy to its full economic potential and for attaining a faster rate of growth. Current legislative proposals are designed to achieve these objectives; they involve the stimulation of the private economy by tax reductions and other incentives. Implicit in these proposals is the assumption of a fairly stable pattern of response to changes in income and demand by both consumers and businessmen for major segments of the economy, and more volatility elsewhere as in investment where we have had a relatively low volume in recent years as indicated in the plant and equipment article in this issue. Considerable independence of movement exists in parts which have to be studied in relation to other more stable functions.

Examination of the postwar experience suggests that consumers tend to spend a fairly constant proportion of the increase in their disposable income. While business investment in plant and equipment is also dependent to a degree on income flows, other factors such as changes in intrabusiness sales and sales to Government and for export, capacity utilization, profit and other expectations are also determining.

Factors underlying buying decisions

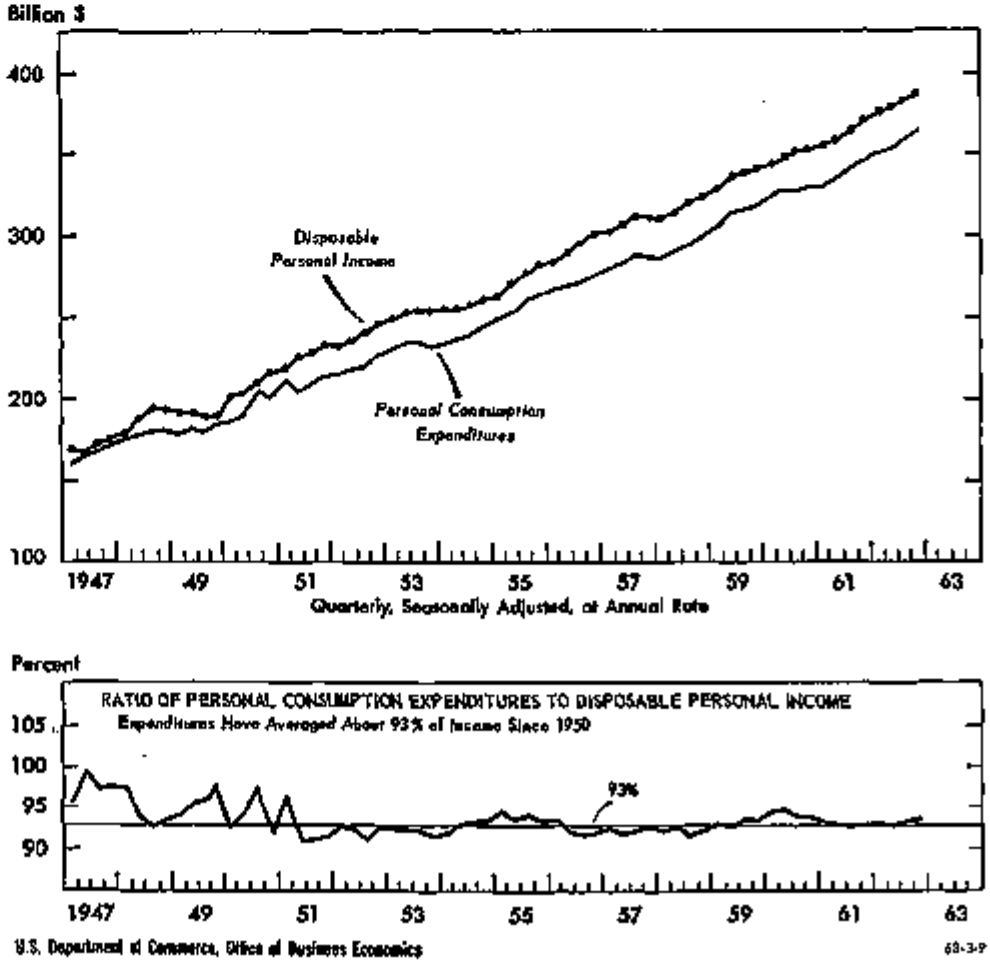
The accompanying charts for selected parts of the economy were prepared to portray some basic relationships; they depict the degree of association which exists between consumer income and spending and business incomes, sales, and investment. Despite the significant changes in the economic, political, and international climate during the postwar period, consumer and business behavior have displayed some well-defined and stable patterns in relation to the fluctuations in total economic activity.

The factors which shape the course of private demand as well as total demand (GNP) are not only manifold in number but vary from period to period both in the intensity and the timing of their impact. Some of these forces exert independent influences—for example, changes in government programs, a significant part of business investment and consumer purchases of durable goods and housing—while others are induced and are affected by the general course of business.

Furthermore, some of these influences are more or less interdependent—i.e., changes in one factor are related to changes in one or more of the other variables. For example, increased sales may yield more profits, and together they may provide the motivation to expand investment outlays. Profit opportunities foreseen independently from new products and new techniques yield higher investment, higher product flows and incomes.

It is virtually impossible, on the basis of present know-how, to obtain clean-cut quantitative determinations of the separate impact on the variable being examined of each of the interrelated factors. For example, will an autonomous increase in the cash flow—i.e., income plus depreciation setasides—tend to stimulate business in-

CONSUMER EXPENDITURES FLUCTUATE CLOSELY WITH INCOME CHANGES



vestment? Or is a sustained rise in sales a prerequisite for investment expansion? Or is the rate of return on investment the major consideration?

The answer to these questions may be indeterminate, depending upon other circumstances such as the rate of plant utilization, the availability of workers, the degree of competition, and the stage of technological progress. Even when one has a knowledge of these other variables, the answer may still be uncertain because of the close interdependence of some of them and the difficulty in determining their separate effects on investment. The cyclical position of business clearly has some influence.

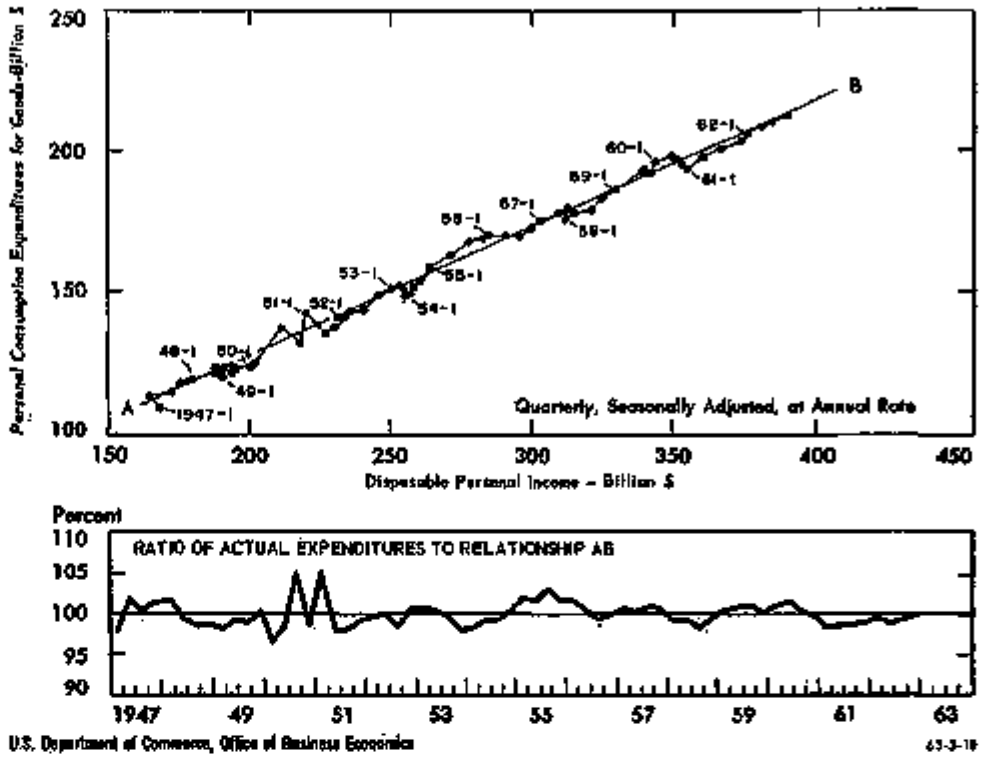
This inability to disentangle the "net" effects partly accounts for the prevalence of different viewpoints held by economists with respect to the impact of certain policy actions.

To complicate matters further, both consumers and businessmen frequently make decisions on the basis of their evaluation of the future course of the economy. At times their forecasts may turn out to be reasonably accurate, and in such cases, the expenditures made can be "explained" on the basis of changes in the basic economic factors. But if the forecasts should turn out to be in error, the actual expenditures would be out of line with those expected from a consideration of income, prices, and other relevant factors.

For example, in the latter part of 1962 corporate cash flow was rising, but at the same time businessmen could foresee no buoyancy in demand in the period ahead and viewed investment prospects as weaker than in the pre-1957 period. Thus, they decided to slow their not-too-vigorous investment expansion. In this short-run case their analysis of future prospects proved to be accurate, but there were other favorable factors—investment credit and new depreciation guidelines which took more time to evaluate and these are probably a factor in the rising programs now foreseen.

On the other hand, following the end of the steel strike in 1959, businessmen expected substantial increases in sales in 1960 and investment was accordingly stepped up. These expectations did not materialize since demand leveled off after the first quarter of 1960, and consequently the movement of investment during that year did not conform.

PERSONAL CONSUMPTION EXPENDITURES FOR GOODS RELATED TO DISPOSABLE PERSONAL INCOME



The role of economic evaluations

The charts suggest that the factors accounting for the major portion of the fluctuations in consumer and business buying are the broad economic measures—such as changes in incomes, in new business received, in sales, and in credit availability. Decisions to enter into or to withdraw from the markets are generally made after an appraisal of present and prospective benefits to be derived from such actions based on economic evaluations.

In the case of new products, certain special considerations are brought to bear on spending decisions. Many companies and individuals invest in research and development and in supporting facilities to develop and market new products with the expectation that they will yield future profitable returns. Such risk-taking ventures result from judgments made as to the probable market response to the end product, and involve a high degree of confidence in the final outcome. The causal or underlying forces motivating this type of spontaneous investment are difficult to measure and quantify but are fundamentally very important.

But a bunching of successful results is frequent in particular parts of the economy, as is evident now in the space programs and many other new products.

Review of Some Major Aspects

As the charts indicate, not all of the spending by consumers and business is accounted for by fluctuations in such basic factors as income flows and demand. The fact that at times the actual expenditures show departures from the relationships involving these particular factors implies that other influences are also at work. These undoubtedly embrace measurable economic influences such as prices, costs, etc., and spontaneous decisions made apart from the dictates of the immediate economic environment.

Not only are present techniques deficient in measuring the separate effects of the "root" factors affecting consumer and business buying, but many individuals make decisions without being aware of the reasons, and

others base their actions on inadequate information, hunches, or other intangible considerations. Of course, most decisions are based on sound business sense, of which there are ample illustrations.

It must be emphasized that none of the charts portrays cause and effect association. Rather, they show relationships between the relevant immediate factors and sales or investment.

Where the degree of association has been quite close and stable over the entire postwar period, it may be assumed that there is a high probability that the indicated relationship will hold when extrapolated into the future. However, care must be taken not to rely unduly on a projection into the future from such relationships even when the association is exceptionally high, since unforseeable spontaneous decisions or events can cause a "break" in historical relation. The events during the Korean conflict provide an apt illustration of such a breakdown. In other cases there are valid reasons why the trend may not be expected to hold over an extended period.

But the following analyses are significant.

1. *Consumers spend a fairly constant proportion of their after-tax income—averaging 93 percent in the postwar years.*

Except for the very early postwar years and sporadically during the period of the Korean conflict, the chart shows a remarkable constancy in aggregate consumer buying relative to disposable personal income [1] (i.e., personal income less taxes). In only a few quarterly periods since 1951 has the ratio deviated significantly from the 93 percent average, with the maximum ratio being 94 percent and the minimum 91 percent.

Cyclically low ratios generally occur in recession periods when durable goods spending is greatly reduced; high ratios occur at times when durable goods buying, particularly of autos, with the resultant borrowing, is exceptionally brisk. In strong recovery periods the ratio tends to rise above the 93 percent average. In a year like 1955 this independent spurt in durable goods buying was a major factor in the basic movement of business.

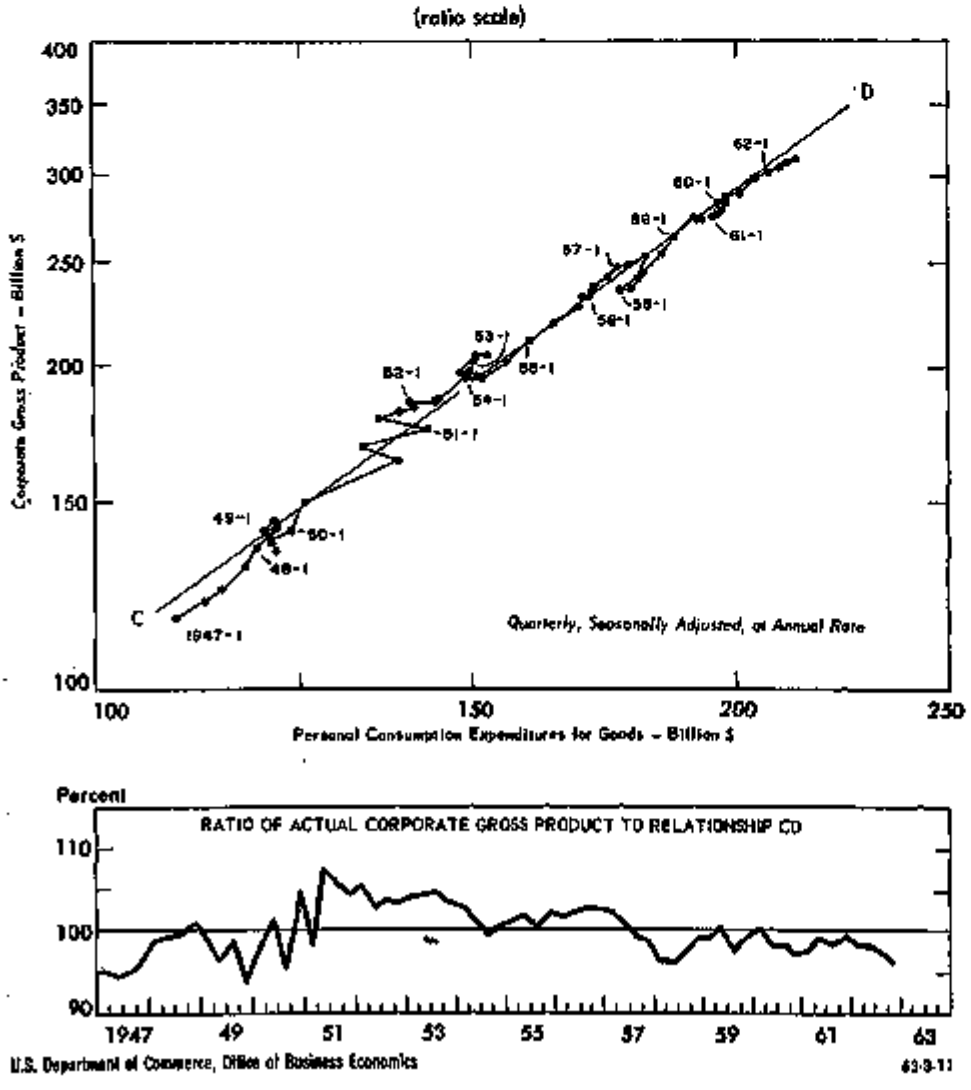
An increase in consumer spendable income is accompanied by a roughly corresponding rise in consumer buying. Thus, consumer expenditures in the first quarter of 1963 are estimated at an annual rate of about $368 billion—93½ percent of the disposable personal income—up 5 percent from a year ago. Disposable personal income increased by about the same percentage. Rising consumer expenditures have been a major source of strength in the recent economic picture.

In view of the fact that consumer expenditures comprise nearly two-thirds of the GNP, the relative stability of consumer buying has been an important factor in dampening overall economic fluctuations in the postwar period. In this the greater size of the built-in income stabilizers has been a factor.

2. *Consumer expenditures for goods are also closely geared to the flow of consumer spendable income, with more independence in durables.*

The postwar experience suggests that nearly one-half of the increase in disposable personal income is spent for goods of all types—food, clothing, automobiles, furniture, and so on. This relation [2]—as the chart shows—has been remarkably stable since 1951, the maximum departure from the re-

CORPORATE GROSS PRODUCT RELATED TO CONSUMER GOODS EXPENDITURES



[1] The data in the accompanying chart are in current dollars, but the same consistency prevails when personal consumption expenditures and disposable personal income are expressed in real terms.

[2] The regression equation based on 1948–62 is as follows: $Y=30+0.70X$ where Y is quarterly consumer goods expenditures and X is disposable personal income, in billions of dollars, seasonally adjusted, at annual rates.

gression line being about 3 percent during the splurge of auto buying in 1955.

In periods of downturn in income, spending on goods tends to fall, mostly because of sharp reductions in buying of durables which is accompanied by curtailed use of consumer credit. In the upswing, the reverse situation prevails.

It may be noted that in the recovery from each of the first three postwar recession lows—1949, 1954, and 1958—expenditures for goods returned to their long-term relationship to income within approximately a year. However, the rise from the bottom of the last recession—the first quarter of 1961—has been slow and spending has remained below the relationship since that time.

The stability in the ratio of total consumer spending to income during this period has been due to the persistent uptrend in consumer spending for services.

It is of interest to note that the present proportion of income spent for services—38¾ percent is now back to where it was in 1929 after having been below this figure for a long postwar period. The failure of goods expenditures to advance adequately has contributed to the recent sluggish recovery in total economic activity and to the persistence of the relatively high rate of unemployment.

As a general rule, however, an increase in spendable income is translated into a proportionate rise in purchases of goods.

3. *Increased consumer expenditures for goods are accompanied by a proportionate rise in corporate gross product.*

Corporate gross product represents income originating in corporations (compensation of employees, corporate profits, and net interest) plus corporate indirect business taxes and capital consumption allowances. Corporate gross product is virtually proportional to corporate sales—which include in addition to the gross product the value of intermediate purchases by corporations.

The accompanying chart shows that corporate gross product (and also corporate sales) tends to move along with changes in consumer expenditures for goods. The relationship indicates that during the postwar period a rise of, say, 10 percent in consumer expenditures for goods was accompanied on the average by a rise of about 15 percent in corporate gross product.[3] Corporations obviously are the source of a large part of the goods which consumers buy. The analysis suggests that sales of corporations to business are also somewhat correlated with the value of goods which consumers buy, but investment, government, and export buying are likewise important.

In certain periods there are significant deviations from the relationship. The lower panel shows the percentage variations from the line of relationship for the quarterly periods portrayed in the upper panel. The maximum variation since 1950 has been +8 percent in the second quarter of 1951 and, on the other side, −4 percent in the second quarter of 1953. Deviations are relatively large: (1) during the period of the Korean conflict when a large part of corporate business was devoted to producing Government war materiel, and (2) around the low points of recession periods when corporate sales of durable equipment to businesses drop very sharply and consumers buy less durable goods. However, as would be expected, the chart indicates unmistakably that there is a definite association between consumer goods expenditures and corporate output or sales.

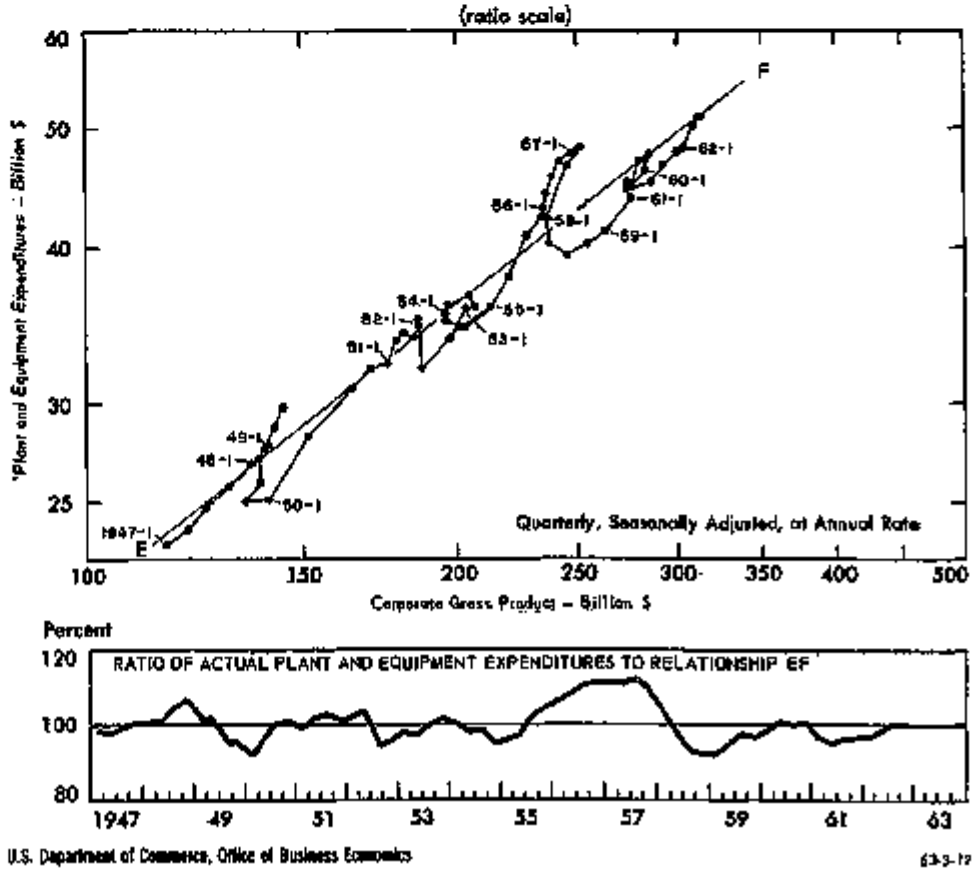
4. *Plant and equipment expenditures are in large part dependent upon the volume of corporate gross product or sales, but to an important extent are a function of exogenous factors—importantly independent investment.*

Throughout the postwar period there has been a general tendency for total plant and equipment expenditures (GNP basis) to reflect changes in corporate gross product.[4] On the average, a 10-percent rise in corporate gross product has tended to be accomplished by about

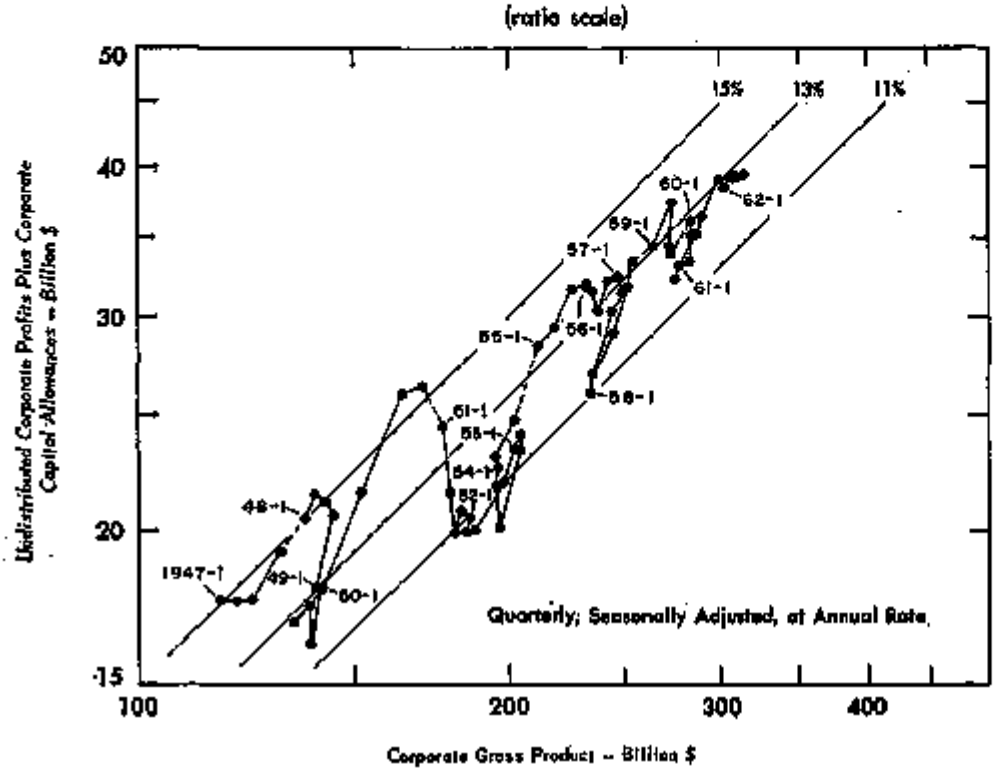
[3] The regression equation based on 1947-62 is: $Y=0.12\ X^{0.9}$ where Y is quarterly corporate gross product and X is consumer goods expenditures in billions of dollars, seasonally adjusted at annual rates.

[4] Total plant and equipment expenditures are closely related to corporate purchases of plant and equipment, so that the general relation is also valid between corporate plant and equipment and corporate gross product. Also, corporate gross product is closely correlated with total GNP so that a similar relation exists between plant and equipment expenditures and total GNP.

PLANT AND EQUIPMENT EXPENDITURES RELATED TO CORPORATE GROSS PRODUCT



UNDISTRIBUTED CORPORATE PROFITS PLUS CAPITAL CONSUMPTION ALLOWANCES RELATED TO CORPORATE GROSS PRODUCT



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an 8 percent rise in business fixed investment.[5]

The significance of this chart lies in the fact that here the deviations from the line of relationship are much larger than in the correlations presented above. Obviously there are other factors—autonomous and induced—which influence the course of fixed investment—again space programs may be noted along with such products as jet aircraft.

Of particular interest is the pattern shown for the last 7 years. The deviations were exceptionally large in 1956 and 1957 when fixed investment was 9 percent and 11 percent, respectively, above the relationship line. The "bunching" of investment outlays in these 2 years resulted in part from tax incentives and the modification in depreciation charges permitted in the 1954 tax legislation. Also contributing to the investment boom was the rise in demand following the recovery from the recession low of 1954. Undoubtedly other factors were effective in this period, particularly the generally high rate of industrial operations and the heavy investment for the "new look" autos. The result of the large investment outlays in 1956 and 1957 was to greatly enlarge the capacity to produce.

Since 1957, plant and equipment expenditures have been low relative to the longer term relationship, reflecting not only a deficiency of demand (consumer goods expenditures discussed previously) but also the existence of excess capacity relative to demand. Because of the latter factor, plant and equipment expenditures have risen by inadequate amounts in recent years, and this has been a major factor in the sluggish growth in total GNP. Profit margins have been lowered and this has also been an adverse factor in the investment market.

5. Corporate profits lag behind rise in corporate gross product.

Over the postwar period, corporate profits have increased relatively less than corporate gross output. With tax liabilities doubling, after-tax profits have risen a little more than one-fourth while corporate gross product has more than doubled. The increase in dividend disbursements has generally paralleled the rise in total output, and, consequently, retained earnings are currently somewhat below their immediate postwar level. Corporate capital consumption allowances have risen 2½ times since 1948.[6]

6. Corporate earnings and depreciation allowances in the long run tend to move with corporate gross product, but there are independent variables.

Corporate retained earnings plus capital consumption allowances since 1948 (about 90 percent of which represents depreciation charges) has tended to move upward with corporate output or sales. The correlation, however, is not especially close, particularly in the period prior to 1955.

In general, retained earnings plus capital consumption allowances of corporations has tended to comprise 13 percent of the corporate gross product. Except for the recession lows of 1958 and 1961, this proportion has been remarkably stable since 1954. Marked departures are apparent during the period of the Korean conflict and in the 1949 recession quarters.

It is worthy of note that retained earnings plus capital consumption allowances were relatively high during the past year, and yet plant and equipment expenditures have tended to ease off a bit since last fall. Since this "cash flow" and plant and equipment expenditures are each related to corporate gross product, there is an implication that both "cash flow" and corporate gross product interact on business fixed investment.

Apparently, at times an increase in neither "cash flow" nor corporate gross product nor both are sufficient conditions to induce a large expansion in investment; other factors must also be favorable. The two parts of the flow—profits and depreciation—are not looked upon by business in exactly the same light.

[5] The regression equation based on 1947–62 is: $Y=0.55 X^{0.96}$, where Y is the quarterly plant and equipment expenditures (GNP basis) and X is corporate gross product, in billions of dollars, seasonally adjusted at annual rates.

[6] A full discussion of the relationship between changes in profits and output is contained in "Corporate Profits and National Output," in the November 1962 SURVEY.

7. Corporate capital consumption allowances and dividend payments have moved upward in the postwar period; corporate retained earnings have declined continually relative to corporate gross product.

The wide fluctuations in corporate cash flow (usually defined as corporate profits after taxes plus capital consumption allowances) over the postwar period reflect the movement of corporate retained earnings which were relatively high in the early postwar period. Dividend payments have shown a steady upward tendency over the postwar period, increasing an average of $0.6 billion per year; capital consumption allowances have been moving strongly upward, averaging $1.6 billion increase per year.

In contrast, the lower panel of the chart shows that in relation to corporate gross product, corporate retained earnings have drifted downward by reason of the dividend flow and the fact that the profit trend has been dampened.

In the 1947–48 period these represented about 10 percent of corporate gross product; by 1952 the ratio dropped to 4½ percent; in 1959 it was 4 percent; and last year less than 3½ percent. In the downturn of each of the postwar recessions, retained earnings took the full impact of lowered profits and dropped very sharply relative to corporate gross product; in each subsequent cyclical recovery a sharp rise occurred, although usually not recovering to the prior peak levels.

8. New orders received by machinery and equipment companies is an indicator of the short-term movement of plant and equipment expenditures.

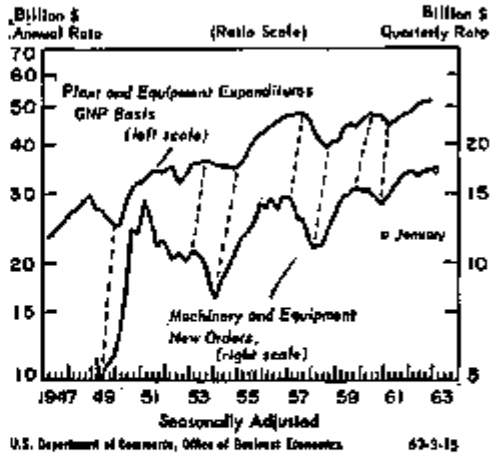
The final chart shows the relatively close parallelism between equipment orders placed and business fixed investment. However, over the postwar period plant and equipment expenditures have lagged new orders by about 6 months. Six months after a turning point in new orders, plant and equipment expenditures generally turn.

This lag is inherent in the time required to produce the equipment after an order is placed. In the last 9 months there has been some levelling off tendency in new orders placed with machinery companies. This would indicate a levelling off in plant and equipment spending in the most recent period. The survey reporting these expenditures elsewhere in this issue of the *Survey* seems to confirm this development.

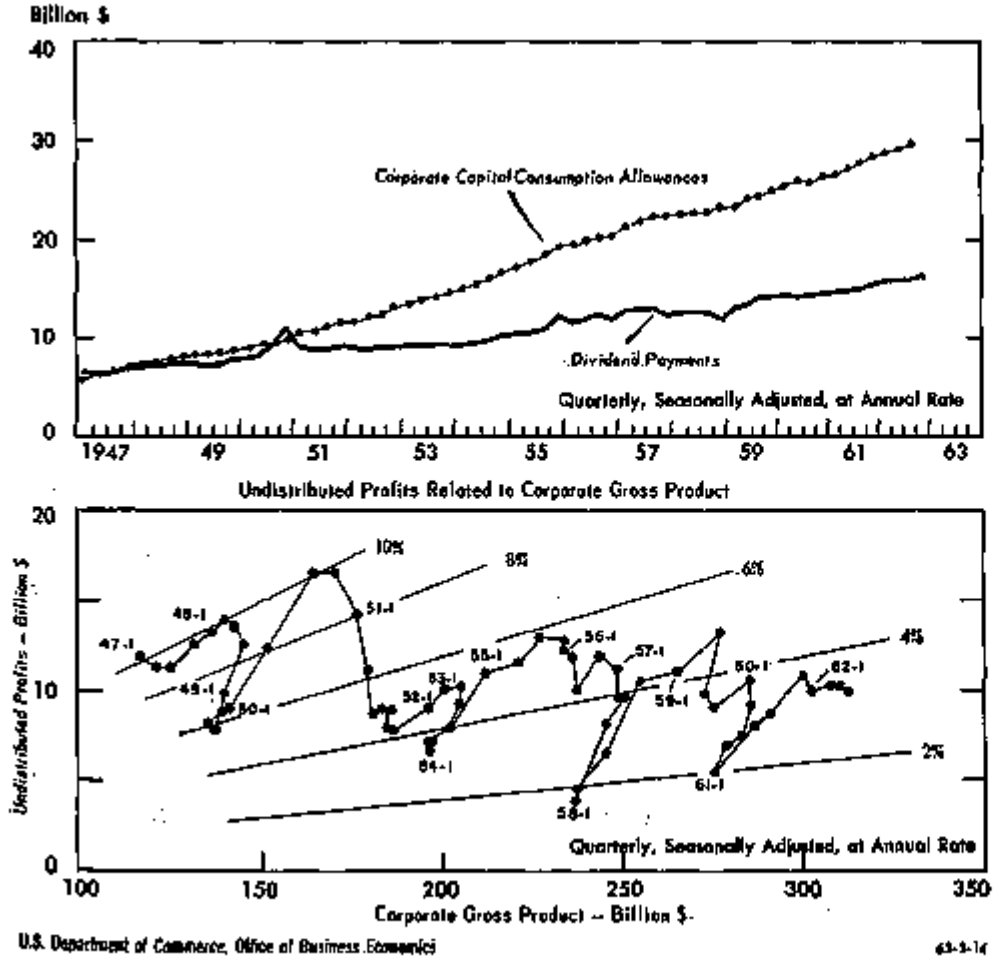
Both machinery orders and plant and equipment expenditures appear to be affected somewhat by business inventory decisions—i.e., when businessmen decide to hold inventories low relative to sales, machinery business is also affected to some degree. Thus, the levelling off tendency in inventories since last spring may also be a factor in the current outlays for plant and equipment. Inventories appear to be now headed upward according to the survey detailed on page 8.

Summary: This series of charts suggests that a basic and persistent factor in stimulating business investment is the demand for goods. Such demand is in turn mainly determined by the flow of income. A significant amount of the total variation in plant and equipment expenditures, however, is not accounted for by the income and demand factors. At times other factors—spontaneous and induced—are important in shaping the course of these outlays. It is clear from our past experience that strong investment is an essential element of a high growth rate. The prospective trend of investment is, therefore, an important consideration in evaluating the near-term economic outlook.

PLANT AND EQUIPMENT EXPENDITURES LAG MACHINERY ORDERS BY 6 MONTHS



CORPORATE CASH FLOW



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